



Safe Shopping Cart

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Abstract

An important question:

Have grocery stores, retailers, supermarkets, and airports become super-spreading virus vectors?

All unavoidable surfaces for shoppers like shopping carts handles and airport luggage carts handle also carry a certain amount of risk in the age of the COVID-19 pandemic.

There are millions of people using shopping carts every day. There are millions of passengers in airports every day using the luggage carts. A study in 2017 found that shopping carts at stores carry hundreds of times of bacteria per square inch than surfaces in your average toilet handle. CDC mentioned that the shopping carts are one of the reasons for spreading the COVID-19 pandemic.

Current solutions

Wiping the cart hand with sanitizer wipes, sometimes not available In high demand. It is not totally effective



Washing or disinfecting the carts by hiring special employees for this job



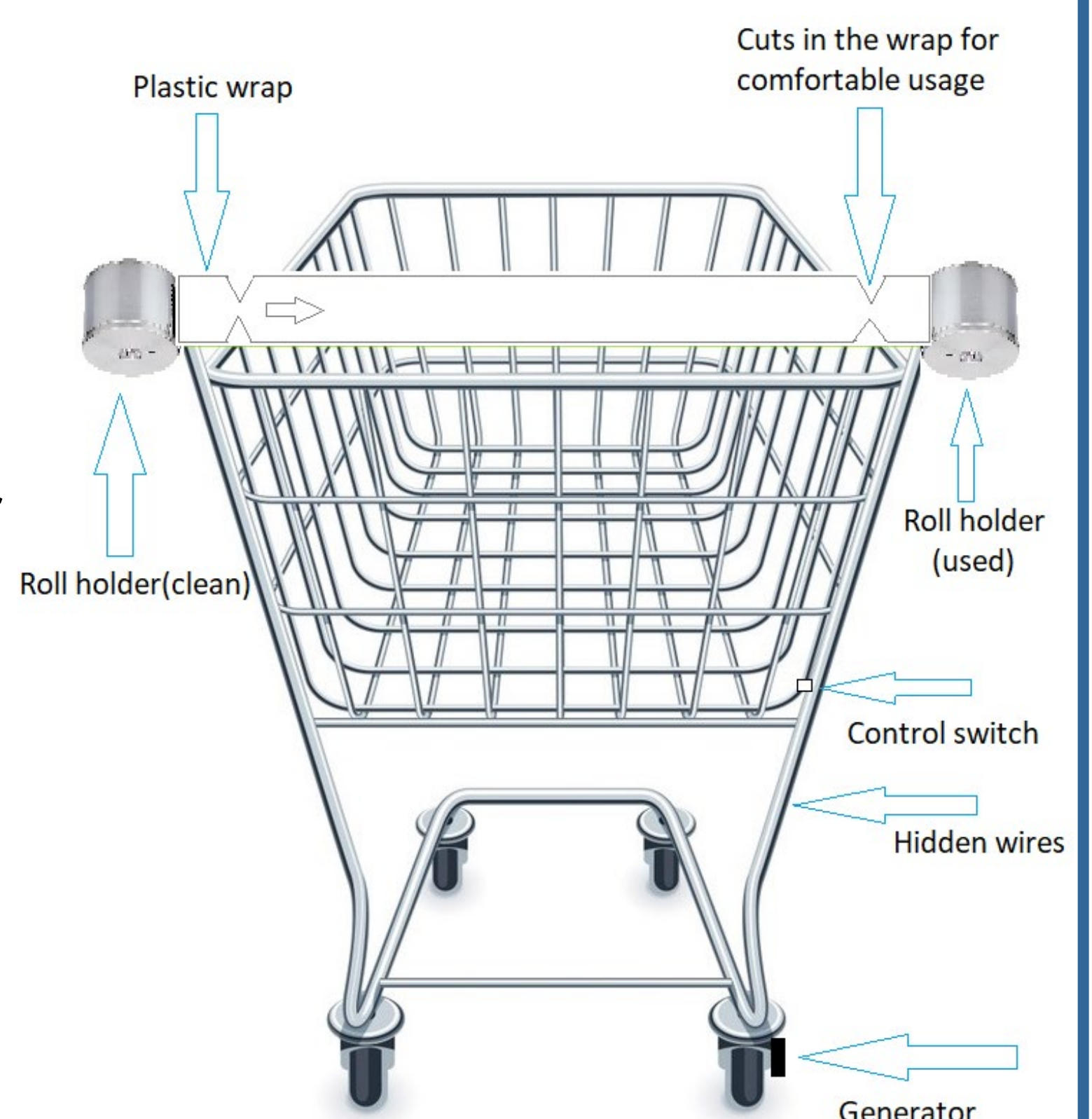
Hand sanitizing system for shopping carts that work in sync with their coin-lock system, all customer will touch the device first without sanitization.



Proposed Method

The idea is based on covering the shopping cart handle before usage with plastic wrap. The customer always will take the cart from the store with an unused clean plastic cover. After each customer, the carts will be collected from the parking lot for the next customers in the store. The carts collecting mechanism will be used to changing the handle plastic covering automatically with a clean wrap by using a small motor powered by a rechargeable battery, the motor will be controlled by a simple circuit including a control switch, timer, non-return gear, and a small generator to charging the battery. The wrapping roll will be enough for hundreds of customers according to its size. The plastic roll will be made from recyclable material, and it will be safe because the used wrap will store in the used roll holder. It will be easy to change the roll by a new one.

The picture is for a demo to describing the device, but the real device details will be hidden for the customer and safe.



Conclusion

There is a race to keep the people safe and healthy in the era of the pandemic. The prevention actions from the disease are more important than the treatment, for that reason we worked for providing a safe and healthy environment for the shoppers.

References

<https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/essential-goods-services.html>.
<https://www.fda.gov/media/137009/download>